

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s):	Bentwich et al.	Art Unit:	1631
App. No.:	10/604,943	Examiner:	MILLER, MARINA I
Conf. No.:	1942	Title:	BIOINFORMATICALLY DETECTABLE GROUP OF NOVEL VACCINIA REGULATORY GENES AND USES THEREOF
Filing Date:	August 28, 2003		

**SUPPLEMENTAL AMENDMENT AND REPLY UNDER 37 C.F.R. § 1.111**

Dear Sir:

Supplemental to the Amendment and Reply Under 37 C.F.R. § 1.111 filed on September 13, 2006 in response to the Office Action mailed March 13, 2006 (the "Office Action"), and in accordance with the Rule of Practice, please enter the following amendments and consider the remarks below.

No fees are believed to be due in connection with the filing of this paper, however, should any fees be deemed necessary, the Commissioner is hereby authorized to deduct any such fees from Deposit Account No. 50-1662 referencing the above reference number.

**Amendments to the Claims** begin at page 2 of this response and **Remarks** begin at page 4.

**AMENDMENTS TO THE CLAIMS**

1. - 20. (canceled)
21. (previously presented) An isolated nucleic acid consisting of 18 to 120 nucleotides wherein the sequence of the nucleic acid comprises:
  - (a) at least 18 consecutive nucleotides of SEQ ID NO: 3760;
  - (b) an RNA equivalent of (a);
  - (c) a sequence at least 42/63 identical to (a) or (b); or
  - (d) the complement of any one of (a)-(c).
22. (new) The nucleic acid of claim 21, wherein the at least 18 nucleotides is of a sequence selected from the group consisting of SEQ ID NOS: 128, 131, and 133.
23. (new) The nucleic acid of claim 21, wherein the at least 18 nucleotides is of a sequence selecting from the group consisting of SEQ ID NOS: 477, 480, and 482.
24. (new) The nucleic acid of claim 21, wherein the nucleic acid consists of 18 to 24 nucleotides.
25. (new) The nucleic acid of claim 21, wherein the sequence of the nucleic acid consists of:
  - (a) SEQ ID NO: 3760;
  - (b) an RNA equivalent of (a);
  - (c) a sequence at least 42/63 nucleotides identical to (a) or (b); or
  - (d) the complement of any one of (a)-(c).
26. (new) The nucleic acid of claim 25, wherein the at least 18 nucleotides is of a sequence selected from the group consisting of SEQ ID NOS: 128, 131, and 133.
27. (new) The nucleic acid of claim 25, wherein the at least 18 nucleotides is of a sequence selected from the group consisting of SEQ ID NOS: 477, 480, and 482.
28. (new) The nucleic acid of claim 25, wherein the nucleic acid consists of 18 to 24 nucleotides.
29. (new) The nucleic acid of claim 22, wherein the nucleic acid is an RNA.
30. (new) The nucleic acid of claim 26, wherein the nucleic acid is an RNA.
31. (new) The nucleic acid of claim 29, wherein the nucleic acid is capable of modulating expression of a target gene.

32. (new) The nucleic acid of claim 30, wherein the nucleic acid is capable of modulating expression of a target gene.

33. (new) The nucleic acid of claim 31, wherein the nucleic acid is at least 15/25 complementary to a binding site sequence of 18 to 24 nucleotides of a target gene and wherein the binding site sequence is located in an untranslated region of RNA encoded by the target gene.

34. (new) The nucleic acid of claim 32, wherein the nucleic acid is at least 15/25 complementary to a binding site sequence of 18 to 24 nucleotides of a target gene and wherein the binding site sequence is located in an untranslated region of RNA encoded by the target gene.

35. (new) A vector comprising an insert, wherein the insert consists of the nucleic acid of claim 21.

36. (new) A vector comprising an insert, wherein an insert consists of the nucleic acid of claim 25.

37. (new) A probe comprising insert, wherein an insert consists of the nucleic acid of claim 21.

38. (new) A probe comprising an insert, wherein an insert consists of the nucleic acid of claim 25.

39. (new) A gene expression inhibition system comprising the vector of claim 35 and a means for inserting said vector into a cell.

40. (new) A gene expression inhibition system comprising the vector of claim 36 and a means for inserting said vector into a cell.

## REMARKS

### 1. Formal Matters

#### a. Status of the Claims

Claim 21 is pending in this application. Claims 22-40 are new. Upon entry of these amendments, claims 21-40 are pending and under active consideration. Applicants respectfully request entry of the amendments and remarks made herein into the file history of the present application.

#### b. Amendments to the Claims

New claim 22 recites the nucleic acid of claim 21, wherein the at least 18 nucleotides is of a sequence selected from the group consisting of SEQ ID NOS: 128, 131, and 133, support for which can be found at Table 1, lines 892-898, 913-919, and 927-933, and paragraphs 1943, 1985, and 2013 of the application as originally filed.

New claim 23 recites a nucleic acid of claim 21, wherein the at least 18 nucleotides is of a sequence selected from the group consisting of SEQ ID NOS: 477, 480, and 482, support for which can be found at Table 1, lines 892-898, 913-919, and 927-933, and paragraphs 1945, 1987, and 2015 of the application as originally filed.

New claim 24 recites a nucleic acid of claim 21, wherein the nucleic acid consists of 18 to 24 nucleotides, support for which can be found at claims 1-3 as originally filed.

New claim 25 recites the nucleic acid of claim 21, wherein the sequence of the nucleic acid consists of (a) SEQ ID NO: 3760; (b) an RNA equivalent of (a); (c) a sequence at least 42/63 identical to (a) or (b); or (d) the complement of any one of (a)-(c), support for which may be found throughout the application including at new claim 21.

New claim 26 recites a nucleic acid of claim 25, wherein the at least 18 nucleotides is of a sequence selected from the group consisting of SEQ ID NOS: 128, 131, and 133, support for which can be found at new claim 22.

New claim 27 recites a nucleic acid of claim 25, wherein the at least 18 nucleotides is of a sequence selected from the group consisting of SEQ ID NOS: 477, 480, and 482, support for which can be found at new claim 23.

New claim 28 recites a nucleic acid of claim 25, wherein the nucleic acid consists of 18 to 24 nucleotides, support for which can be found at new claim 24.

New claim 29 recites a nucleic acid of claim 22, wherein the nucleic acid is an RNA, support for which can be found at claim 1 as originally filed and at paragraphs 1944, 1986, and 2014 of the application as originally filed.

New claim 30 recites a nucleic acid of claim 26, wherein the nucleic acid is an RNA, support for which can be found at paragraphs 1944, 1986, and 2014 of the application as originally filed.

New claim 31 recites a nucleic acid of claim 29, wherein the nucleic acid is capable of modulating expression of a target gene, support for which can be found at claim 3 as originally filed.

New claim 32 recites a nucleic acid of claim 30, wherein the nucleic acid is capable of modulating expression of a target gene, support for which can be found at claim 3 as originally filed.

New claim 33 recites a nucleic acid of claim 31, wherein the nucleic acid is at least 15/25 complementary to a binding site sequence of 18 to 24 nucleotides of a target gene and wherein the binding site sequence is located in an untranslated region of RNA encoded by the target gene, support for which can be found at Table 2 lines 7203-7282, which shows that among all listed target binding sites of the nucleotide represented by SEQ ID NO: 477, the sequence of which is included in the sequence of SEQ ID NO: 128, at the lowest level of complementarity a target binding site of 25 nucleotides has 15 nucleotides complementary to the sequence of SEQ ID NO: 477; and (b) that the binding site sequence is located in an untranslated region of RNA encoded by the target gene, support for which can be found at paragraphs 22 and 1947 of the specification as originally filed.

New claim 34 recites a nucleic acid of claim 32, wherein the nucleic acid is at least 15/25 complementary to a binding site sequence of 18 to 24 nucleotides of a target gene and wherein the binding site sequence is located in an untranslated region of RNA encoded by the target gene, support for which can be found at new claim 33.

New claim 35 recites a vector comprising an insert, wherein an insert consists of the nucleic acid of claim 21, support for which can be found at paragraph 24 of the application as filed.

New claim 36 recites a vector comprising an insert, wherein an insert consists of the nucleic acid of claim 25, support for which can be found at paragraph 24 of the application as filed.

New claim 37 recites a probe comprising an insert, wherein an insert consists of the nucleic acid of claim 21, support for which can be found at paragraph 28 of the application as filed.

New claim 38 recites a probe comprising an insert, wherein an insert consists of the nucleic acid of claim 25, support for which can be found at paragraph 28 of the application as filed.

New claim 39 recites a gene expression inhibition system comprising the vector of claim 35 and a means for inserting said vector into a cell, support for which can be found at paragraphs 26-27 as originally filed.

New claim 40 recites a gene expression inhibition system comprising the vector of claim 36 and a means for inserting said vector into a cell, support for which can be found at paragraphs 26-27 as originally filed.

### **c. Amendments to the Specification**

In regards to Amendments to the Specification made in the Amendment and Reply Under 37 C.F.R. § 1.111 filed on September 13, 2006, please find the following support for the Amendments.

Paragraph [0146] was amended to assign SEQ ID NO: 3751 to the sequence shown in Fig. 12A in compliance with 37 C.F.R. §§ 1.821-1.825.

Paragraph [0151] was amended to assign SEQ ID NOS: 3754-3759 to the listed sequences in compliance with 37 C.F.R. §§ 1.821-1.825.

Paragraph [0157] was amended to assign SEQ ID NO: 3752 to the sequence shown in Fig. 13A in compliance with 37 C.F.R. §§ 1.821-1.825.

Paragraph [0160] was amended to assign SEQ ID NO: 3753 to the sequence shown in Fig. 14A in compliance with 37 C.F.R. §§ 1.821-1.825.

## **2. Conclusion**

Applicant respectfully submits that the instant application is in good and proper order for allowance and early notification to this effect is solicited. If, in the opinion of the Examiner, a

telephone conference would expedite prosecution of the instant application, the Examiner is encouraged to call the undersigned at the number listed below.

Respectfully submitted,

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Dated: September 21, 2006

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